AMENDMENTS TO THE CLAIMS:

Claims 9, and 17-20 are canceled without prejudice or disclaimer. Claims 1, 4, 10, 12 and 13 are amended. The following is the status of the claims of the above-captioned application, as amended.

1. (Currently amended) A method for forming a plurality of recombined homologous double-stranded polynucleotides from at least two homologous double-stranded template polynucleotides, said method comprising the steps of:

a) providing a solution comprising at least two non-methylated homologous double-stranded template polynucleotides and one or more thermostable mismatch repair protein(s);

b) denaturing the template polynucleotides into single-stranded polynucleotides by increasing the temperature of the solution;

c) annealing the different single-stranded polynucleotides by lowering the temperature of the solution, wherein heteroduplexes are formed;

d) allowing the thermostable mismatch repair protein(s) to repair nucleotide mismatches in the heteroduplexes, wherein recombined new duplexes are formed; and

e) ~~optionally,~~ repeating steps b) through d) ~~for one or more cycles~~ at least once; wherein the new duplexes of step d) serve as new template polynucleotides in step b) in each repetition ~~subsequent cycle~~.

2. (Original) The method of claim 1, wherein the at least two homologous double-stranded template polynucleotides are obtained by PCR amplification.

3. (Original) The method of claims 1 or 2, wherein the at least two homologous double-stranded template polynucleotides encode homologous polypeptides.

4. (Currently amended) The method of claim 1, wherein the at least two homologous double-stranded template polynucleotides encode homologous enzymes~~, preferably amylases, proteases, cellulases, lipases, xylanases, or phospholipases~~.

5. (Previously presented) The method of claim 1, wherein the solution comprises a population of cells or a lysate of a population of cells.

7. (Previously presented) The method of claim 5, wherein the population of cells or the lysate of a population of cells comprises the mismatch repair protein(s).

8. (Previously presented) The method of claim 5, wherein the population of cells, or the population of cells giving rise to the lysate, do not methylate newly synthesized polynucleotides.

9. (Canceled)

10. (Currently amended) The method of claim 1, wherein the thermostable mismatch repair protein(s) comprises a MutS homologue~~, preferably MutS YT1 of *Thermus aquaticus*~~.

11. (Previously presented) The method of claim 1, wherein the thermostable mismatch repair protein(s) comprises a MutL homologue, a MSH2 homologue, a MSH6 homologue, a MutM homologue, a MutY homologue, a MutT homologue, a MutH homologue, a HexA homologue, a HexB homologue, or a GTBP/p160 homolog.

12. (Currently amended) The method of claim 1, wherein the denaturing is achieved by increasing the temperature of the solution~~, preferably~~ to at least 90°C.

13. (Currently amended.) The method of claim 12, wherein the annealing is achieved by lowering the temperature of the solution~~, preferably at least to a temperature at which the mismatch repair protein(s) functions, more preferably at least~~ to between 55°C and 75°C.

14. (Currently amended.) The method of claim 1, wherein steps b) through d) are repeated for between 1 and 10 cycles; wherein the new duplexes of step d) serve as new template polynucleotides in step b) in each ~~subsequent cycle~~repetition.

15. (Currently amended.) The method of claim 1, wherein steps b) through d) are repeated for at least 10 cycles; wherein the new duplexes of step d) serve as new template polynucleotides in step b) in each ~~subsequent cycle~~repetition.

16. (Previously presented) The method of claim 1, wherein additional steps are performed, said additional steps comprising:

f) g nerating a gene library by cloning the plurality of recombined polynucleotides;

g) expressing and screening the gene library for an activity or property of interest; and

h) isolating or identifying the recombined polynucleotide which gives rise to the activity or property of interest.

17-20. (Canceled)

21. (New.) The method of claim 4, wherein the at least two homologous double-stranded template polynucleotides encode amylases, proteases, cellulsases, lipases, xylanases or phospholipases.

22. (New.) The method of claim 1, wherein the thermostable mismatch repair protein(s) comprises MutS YT1 of *Thermus aquaticus*.